SEVEN HUNDRED CASES OF GENERAL PARALYSIS OF THE INSANE.

BEING AN ANALYSIS OF THE CASES WHICH HAVE OCCURRED IN THE GLAMORGAN COUNTY ASYLUM, FROM 1867 TO 1896.

--------ooOoo--------

At the Annual Meeting of Alienists in Switzerland in 1888, Wille directed attention, to the writings of Felix Plater, who practised at Bâle nearly three centuries before, and in these writings are to be found very definite descriptions of general paralysis; but it was not till after Wille' in 1672, Haslam about 1800, and Bayle twenty years later, had each independently described the disease, that any great interest was awakened in it. Since that time however, it has furnished a fruitful source of interest and discussion to many physicians, which, has not only been abiding, but as the disease began

to be better understood, has increased to a wonderful extent as years went on.

The large amount of attention which has been bestowed upon most of the prominent features of the disease, as is indicated by the numerous writings on the subject, both in this country and abroad, and the great variation not only in the results, but in the interpretations which have been put upon them by different observers, has led me to think that an examination of the records of this Asylum, bearing on the cases of general paralysis, might throw some light on many of the features of the disease, and help, even if only by confirming the conclusions arrived at by other observers, in rendering more definite our knowledge of this now common but intensely interesting malady.

I am of course aware, that the records of one county may not indicate accurately, the state of affairs to be found in others, but the fact that the district from which these cases are drawn, includes the two great seaport towns of Newport and Swansea, in addition to a large industrial and agricultural

area, - attracting as they must do such a varied population to the neighbourhood - would seem to justify the belief, that Glamorganshire is peculiarly suited for the purposes of such an investigation.

In order therefore to obtain sufficient data, to enable me to review the matter under discussion, I have carefully prepared a set of tables - which it does not seem necessary to reproduce here - showing opposite each patients name the following particulars.-

(1) Year of admission.

(2) Age at onset.

(3) Age at death.

(4) Condition as to marriage.

(5) Occupation.

(6) Assigned cause.

(7) Existence or non-existence of Hereditary Predisposition.

(8) Duration in years or months.

(9) Occurrence, or non-occurrence of Congestive Seizures, with the period at which they appeared, together with a description of the attacks and whether fatal or not.

(10) Prevailing state of mental disorder.

(11) Complications - such as, Bedsores, Retention of Urine, Haematomata, Pneumonia, Phthisis &c.

(12) Termination.

(13) Presence of a spastic or an ataxic condition.

(14) Nationality.

The period under consideration is one of thirty years 1867 to 1896 inclusive, and in discussing some of the above points I have compared the results obtained by dividing that period into three decades.

PROPORTION OF G. P.s. TO THE TOTAL ADMISSIONS AND THEIR DISTRIBUTION AS TO SEX.

Of 5842 total admissions during the thirty years 1867-1896 inclusive, 702 were general paralytics or 12%, the distribution of the sexes being as follows.-

Years 1867-1896.

Males	Females	Totals	
3193	2649	5842	Total admissions.
574	128	702	G. P. admissions.
18%	4.8%	12.3%	p.c. of total admissions.

There were thus 18% of the total male admissions, who were general paralytics, to 4.8% of the total female admissions, or almost exactly four males to one female. This proportion corresponds with that which was given by Mickle, in an investigation of the same question, but calculated on the statistics contained in the Reports of the Commissioners in Lunacy England, (Nos.35-6-7-8) and dealing with a much larger number - viz over 54,000 persons, and may therefore be taken to fairly represent the condition of affairs, as indeed is done by most observers on the subject at the present time, though twenty years ago there seems to have been a strange diversity of opinion on this point, Sander ("Berliner Klnische Wochens" Feb.1870 p.81) placing the proportion at 10½ males to one female while others put it even higher.

The above per centages are somewhat higher than those usually given, but this is probably accounted for by the smaller numbers under consideration, Mickle (Op. Cit. p.246) giving 7.8% as the p.c. of total admissions of both sexes whilst Arnaud (An. Med.

Psych. July 1888 p.86) gives the per cent of G. P.s. to total admission as follows.-

1882	13.03%	1885	14.60%
1883	14.75%	1886	15.45%
1884	11.00%	1887	19.50%

All the above cases being those of pauper lunatics the proportion of male to female among private patients is not here considered.

It is interesting to note that the disproportion between the numbers of the two sexes affected with general paralysis, is less marked at the earlier ages, than at the later, as is shown by the following table, which is a comparison of the actual numbers of the two sexes as they occurred here during the period under consideration.

Age.	Male	Female	Proportion
under 30	52	15	3.4 to 1
30 to 39	273	64	4.2 to 1
40 to 49	189	34	5.5 to 1
50 to 59	51	14	3.6 to 1
60 & over	8	1	8.0 to 1

Taking the average proportion therefore, as

four males to one female, it is seen that female general paralytics relatively to male, are over the average under the age of 30 (3 to 1) about equal to the average at the ages 30 to 39 (4 to 1), under the average at the ages 40 to 49 (5 to 1), rather over the average at the ages 50 to 59 (3 to 1), and at 60 and over much under the average. Comparing these results with those of other observers on this point, we find that Doutrebente and Baillarger assert that the sexual disproportion becomes less after the age of 45 (Op. Cit. Thèse 1870), and the above figures show that this at least is true of the ages 50-59, the lessening of the disproportion after the age of 50, being well marked, while the increase given as occurring at 60 years of age and over is hardly to be relied on, the numbers being so small, though they are stated for the sake of completing the table and may be taken for what they are worth.

To the occurrence of the menopause, has been attributed by the above writers, the increase in the number of female general paralytics at the ages 50-60, and there are some grounds for this assertion,

for I find that there is a greater disproportion between the per cents. of the general paralytics admitted at the ages 40-50 and 50-60 in the male, than in the female the per cents. of all G. P.s. being

Age	Male	Female
40-50	29.7%	23.4
50-60	8.2%	10.2

But this is comparatively unimportant and requires more careful investigation than the importance of the point seems to justify.

COMPARISON OF RESULTS OBTAINED BY DIVIDING THE SAME PERIOD INTO THREE DECADES.

Table I. Showing per cent. of G. P. admissions to total admissions and proportions of the two sexes, for the decade 1867-1876.

Males	Females	Totals	
672	573	1245	Total admissions.
116	27	143	G. P. admissions.
17.2%	4.8%	11.4%	G. P. per cent.

3.5 males to 1 female.

.....

Table II. Showing the same for the decade 1877-1886.

Males	Females	Totals	
911	737	1648	Total admissions.
136	27	163	G. P. admissions.
15%	3.6%	9.8%	G. P. per cent.

4.1 males to 1 female.

.....

Table III. Showing same for the decade 1887-1896.

Males	Females	Totals	
1610	1339	2949	Total admissions.
322	74	396	G. P. admissions.
20%	5.5%	13.4%	G. P. per cent.

3.6 males to 1 female.

For the first decade (Table I), the sex proportion is therefore 3.5 males to 1 female, and is below the average, as is also the per cent. of male general paralytics to the total admissions, while the female per cent. is equal to the average, (see table of totals).

During the second decade the sex proportion is seen from Table II to be four males to one female, and is therefore about the average, but the per cent.

of both males and females to the total admissions is below the average.

During the third decade the proportion of females to males is again above the average, whilst the G. P. per cents. of both sexes of total admissions are above the average found in the whole period.

The highest relative proportion of females to males was therefore during the first decade, while the lowest was during the second.

From this we conclude that general paralysis has become more frequent during the last thirty years, both in males and females, but that the males are chiefly responsible for this increase.

The same thing is seen from the following table prepared by Dr. R. S. Stewart (Journal of Mental Science Oct.1896) and representing the proportion of general paralytics per cent. of total admissions for three quinquenniads as under.-

Years	Males	Females	Totals
1878-82	12.8	3.3	8.0
1883-87	14.3	3.1	8.6
1888-92	14.7	3.4	8.9

This based on the Annual Reports of the Commissioners in Lunacy for the fifteen years 1878-92 inclusive, and comprising a total of 18.438 G. P.s., indicates an increase of General Paralysis from 8% to 8.9% for both sexes, the females showing an increase of 0.1%, while the males show an increase of 1.9%.

General Paralysis was therefore less frequent during the second decade, than it was during the first, both among males and females, but the increase again asserted itself during the third decade, and in a much greater degree, especially among the males.

AGE RELATION.

The mean age of all cases of insanity - excluding general paralytics - admitted here during the last thirty years, I have calculated to be in males 39 years and in females just over that age or 39.2 years, and it has shown a tendency to become greater during that period, for it was only 38.4 years in males and 38.7 years in females while for both sexes it was 38.5 years, during the first decade.

Now comparing these with the mean ages of all general paralytics admitted during the same period, the results are as follows.-

Showing mean age in G. P.s. of both sexes for the three decades.

Years	Males	Females	Both Sexes
1867-76	38.6	38.0	38.0
1877-86	38.3	37.0	37.0
1887-96	38.9	37.0	39.0
Totals	38.6	37.3	38.0

From the above it is seen therefore, that the mean age of general paralytics of both sexes on admission is slightly lower than that of all admissions excluding G. P.s., but that while male G. P.s. are slightly older on admission than the other insane, female G. P.s. are somewhat younger.

It is also seen that male G. P.s. are older on admission than females, and have always been so since 1867, and that while the mean age of the males has shown a tendency to become greater, (0.3 representing the difference in per cent. between the first

and last periods) the mean age of females on admission has become markedly less, (1.0 representing the difference in per cent. between the same two periods).

Arnaud (An. Med. Psych. July 1888 p.86) stated that the mean age of general paralytics is lower than formerly and Ritti (An. Med. Psych. Sept. 1890 p.244) also says "that the mean age of G. P.s. is progressively diminishing since the beginning of the century", but this does not seem to be the case, at least in this Asylum; and there is no reason to suppose that the records here are more unreliable than those of other asylums.

Comparing the above results with what has been stated by others, the state of affairs is as follows.-

Several authorities viz Calmeil, Parchappe, and Marcé give 44 as the mean age while Versin gives from 35 years to 45 and Arnaud for men 39½ (An. Med. Psych. July 1888 p.86) while Mickle in his book (p.250) gives 33. The same divergence of opinion is observable between the statement made by Baillarger, (Gaz. des Hôpitaux July 1846 p.317) that the average

age on admission was in females, one year less than in males and that of Burman who said it was 3½ years less - the latter for Devonshire while in this county the difference is seen to be 16 months, taken over the full period, while it has only varied during the three decades from 1.3 to 1.9 years, showing a tendency therefore to become somewhat more pronounced than formerly.

AGE FREQUENCY.

The statement made by Mickle, (Op.Cit. p. 248) that general paralysis is found most frequently between the ages 30 and 55, is borne out by the following table, at least as far as regards the ages 30 to 50 for it is here seen, that during the three decades the per cent. of G. P.s. at these ages, is over 30% of total admissions at that age in the first period and that it rises to over 33% in the second, reaching in the third 45% while if the age period from 30 to 60 be taken, the result is still more striking 58% representing the per cent. for the third period.

Showing in the three decades the p.c. of G.P.s. at each age to the total admissions.

Ages	1867-1876	1877-1886	1887-1896
	p.c. of total admissions.		
20-30	3.7	4.3	5.4
30-40	20.6	20.4	22.6
40-50	10.8	13.0	22.7
50-60	5.5	10.8	12.7

Now while the p.c. of G. P.s. between the ages 30 and 60 shows such a remarkable increase over the three decades, that of G. P.s. at the earlier ages (20-30), also shows an increase but not nearly to the same extent, the difference being 1.7% between the first and third decades, while the difference at the ages 30-50, is one of 13.9%. This would seem to support the statement made earlier, that the mean age is higher than formerly.

The increased per centage between the ages 30 and 50, is thus seen to be due to the greater number of admissions between the ages 40 and 50, and indeed it has been often asserted, that the disease is most frequent at the latter age period, and according to Mickle (Op. Cit. p.249) this is inaccurate as re-

gards actual numbers though true of the G. P. per cent. of total admissions in each decade age, and he proves this by statistics taken from the three Lunacy Blue Books (35, 36, & 37).

While the above table taken as a whole does not bear this out, yet if the p.c. at the ages 40-50 be followed through the three decades, it is seen that they gradually increase, until in the third the statement made by Mickle is seen to be actually the case, being as 22.6% to 22.7% and the same applying to females, would support the statement of Jung ("Allegem. Zeits. für Psychiatrie" XXXV Band p.p.235, 625) that in women, general paralysis is a disease of the climacteric.

GENERAL PARALYSIS IN THE YOUNG.

A very noticeable point in studying the ages on admission, is the fact that only seven in the total of 702 cases, were under the age of 25 years; or about one in a hundred and this corresponds with the returns in the Commissioners Reports, while Arnaud came to t similar conclusion, finding 2 in 202

cases (Annal. Med. Psych. July 1888 p.86).

The youngest age at which a general paralytic was admitted during the thirty years, was 19, while there were two at 21, and, judging by the accounts of these in the records of the asylum there is not much doubt that they were typical cases.

Several are on record which were much younger than the above, viz Clouston records a case at 16 (Journal of Mental Science Oct.1877) while Wiglesworth and Turnbull also record cases at the ages of 16 & 12 respectively (Journal of Mental Science July 1883).

Of those who were over 25 but under 30, I find that 9.4% of total admissions is the figure for this asylum, though it is somewhat greater than is usually given, viz the Lunacy Blue Books give 8.5% whilst Bayle and Mendel (Op. Cit.) give respectively 2.2% and 4%, though in the case of the last two observers, the numbers in question were so small that they cannot carry much weight.

As is seen from the foregoing table the p.c. of general paralytics to total admissions between 20 and 30 years of age has increased slowly but steadily

rising from 3.7% to 5.4%, during the last 30 years, though this is not such a marked increase, as that at the next decade age 30-40.

Mickle (Op. Cit.) says "one is led to think that formerly, general paralysis occurred somewhat later in life, on the average than is nowadays the case" and gives statistics to substantiate this point, viz, that in contradistinction to the conclusions of Bayle, Calmeil, König and others - who collectively had seen less than a dozen cases under 30 years of age - he showed by means of figures drawn from the Commissioners Reports that nowadays 8.5% represented the proportion of cases under 30, while he also quotes Austin with 7%, and 8.5% at the Devon Asylum, in support of his view. But taking into consideration the fact, - as has been stated before - that the mean age of all G. P.s., is higher than it used to be, this would rather seem to favour the views advanced by Charcot and Dutil, respecting the supposed earlier incidence of the disease, that "this hypothesis is a little too pessimistic. We would rather be inclined to say that we are better fitted than our predecessors

to diagnose general paralysis", and this is borne out by the fact, that the p.c. of cases in which the several particulars are noted as "unknown", (such as duration, age, cause, &c.) shows a very marked progressive diminution since 1867.

GENERAL PARALYSIS IN THE AGED.

General Paralysis in the aged according to Mickle (Op. Cit.), are mostly cases in which ordinary paralysis is associated with senile, or other mental defect or disorder, and while one must, after reading the records of such cases in this asylum for the last thirty years, agree with him to a certain extent, yet there are recorded three cases, in which the age was stated to have been over 65, which seem to have been cases of typical G. P., the duration in each being under two years, the symptoms of muscular tremor and speech hesitancy are also noted, at the time of admission, whilst two had congestive seizures, one terminating in this way.

Others over 60 are six in number and these are not included in this analysis, as from careful

perusal, they do not seem to meet the requirements of typical cases, though undoubtedly most had symptoms strongly suggesting general paralysis.

Arnaud saw three cases at 63, 64 & 67 respectively, and concluded that general paralysis tends to become more frequent after 60, and while this would seem to be true of those at the ages 50-60 as is seen from the last table, in which the proportion of those at that age, has risen from 5.5% to 12.7% in thirty years, there is practically no evidence in the reports of this asylum, in support of this assertion, and at the same time, it must be remarked, that a more extensive experience of general paralysis in the aged, than is represented by three cases seems to be desirable, before one is justified in making a statement like the above. On the other hand the tendency seems to be rather for the disease to limit itself more and more between the ages of 30 & 50.

MARRIAGE RELATION.

Table I. Showing order of frequency in Married, Single, and Widowed G. P.s., in p.c. of all cases admitted.

	Male	Female
M.	28	5.4
S.	7.3	1.9
W.	15.2	4.1

From the above table it is seen, that of all persons admitted, the following is the order of frequency in which the sexes are affected with general paralysis, as regards the marriage relation.-

(1). Married Males
(2). Widowed "
(3). Single "
(4). Married Females
(5). Widowed "
(6). Single "

The married are most frequently affected in both sexes, while the single are least so, - this being for the full period and a study of the following tables (Nos.2, 3, & 4) for each of the three decades, shows the same order of frequency, there is thus no change since 1867.

Table II. Showing order of frequency for the decade 1867-1876.

Male	Female	Total	
M. 27.5	5.6	16.8	p.c. of total admissions.
S. 4.8	2.4	4.0	" " " "
W. 18.6	4.3	9.0	" " " "

.....

Table III. Showing order of frequency for the decade 1877-1886.

Male	Female	Total
M. 23.8	5.2	14.4
S. 6.4	0.47	4.4
W. 10.0	3.0	5.5

.....

Table IV. Showing order of frequency for the decade 1887-1896.

Male	Female	Total
M. 32.7	7.2	20.0
S. 10.7	3.1	7.7
W. 17.0	5.1	13.4

The above results correspond with what Mickle (Op. Cit. p.253) found to be the state of affairs on this point, as is seen from a table given by him in which he deals with G. P. admissions to all asylums in England and Wales, during a period of three years, and moreover, he proves that it is so

of G. P.s. at all ages, with the single exception of those at the ages 50-59, where he found single men in greater number than widowed.

Table V. Showing the proportion of males to females in the different conditions as to marriage in G. P.

	Males admitted	Females admitted	Proportion
M.	420	91	4.6 to 1
S.	116	20	5.8 to 1
W.	35	16	2.1 to 1

From the above it is observed, that the proportion of females to males, is lowest in single general paralytics being one female to six males (nearly), whilst it is highest in Widowed G. P.s., there being just over two males to one female. This corresponds with the conclusions which Mickle (referred to before) arrived at by a study of the Blue Books.

Now if we compare these results with those for the three decades, (as in the following tables) we find that the disproportion between married males and females has become less marked than formerly, that the proportions of the widowed have remained practically unaltered, and the disproportion between

single males and single females has become more marked, rising from 3 to 1, to 5 to 1, whilst in addition on comparing these figures with those dealing with the totals (Table I), it is seen that while the results are for the most part similar, a noticeable exception is that occurring in the first period, where the proportion of females to males is lowest in married G.P.s. contrasting very markedly with the other two periods, during which the proportion of women to men was lowest in single G. P.s.

1867-1876.

	Male	Female	
M.	93	18	5.1 to 1
S.	14	4	3.5 to 1
W.	8	4	2.0 to 1

.....

1877-1886

	Male	Female	
M.	101	23	4.3 to 1
S.	27	1	27 to 1
W.	6	3	2 to 1

.....

1887-1896

	Male	Female	
M.	226	50	4.5 to 1
S.	75	15	5.0 to 1
W.	21	9	2.3 to 1

It would therefore seem, that whereas single men are becoming more liable to general paralysis, married men are less so, but Dr. Chapman (Journal Ment. Science, April 1879 p.377) found, that although the single men were more liable to insanity generally, than the married in the proportion of 2 to 1 yet the condition as to marriage among G, P.s., made only a very slight difference in the frequency (as indeed is found here), and concluded, that it was the same causes which give rise to insanity, that made us liable to remain single, and this seems to be the only significance to be attributed to the above figures.

TYPES OF GENERAL PARALYSIS AND THEIR RELATIVE FREQUENCY.

The great majority of general paralytics can on careful examination, be divided into three great clinical types, according as the state of mental disorder, can be described as one of Dementia, Exaltation or Melancholia, I do not mean to employ the word Dementia to describe the condition into

which all general paralytics sooner or later lapse, and which is so characteristic of the final stage of the disease, nor do I mean to employ the word Exaltation to describe the prevailing condition at the onset of the malady, but rather to use them as a description of the patient's mental state, not only at the beginning of the malady, but also to describe the prevailing and more or less constant condition of mind which it is admitted is often characteristic of the different types, throughout their course.

I have endeavoured therefore, to divide the cases under consideration, in this way, and in so doing I have omitted those in whom there was not a definite indication, of this prevailing form of mental disorder, so that the following figures in so far as they relate to the per cents. may be taken as being fairly accurate.

I find that the great majority of the cases which have occurred here, can be classed under the exalted or maniacal type and constitute 54.2% of the total number of G. P.s. admitted, while 40% were of the demented type, and those in a melancholic condit-

ion, accounted for the remainder.

p.c. of the different types to total G. P. admissions.

Maniacs	Dements.	Melancholics
54.2%	40.0%	5.8%

The question as to whether there is any change taking place of late years in the relative frequency of the above types, has led me to compare the p.c. of each, during the three decades, and with the following result..

Showing the G.P. p.c. of each type to the total admissions of each class of insanity.

	Dements.	Maniacs	Melancholics
1867-76,	17.5%	13.8%	1.4%
1877-86,	27.2%	12.1%	2.3%
1887-96,	43.2%	11.3%	1.24%

From this it is seen, that there has been a large increase in the per cent. of the demented type, while there has been a corresponding decrease in the per cent. of the maniacs, during the last thirty years, both being calculated on the total

admissions of the respective types. It might also be noted that on estimating the per cent. of admissions of dements of all classes of insanity to the total admissions, there is found to be a considerable decrease during the same period, the per cent. falling from 18.2% (1867-1876), to 12% (1887-96) while the per cent. of maniacs to the total admissions has also been decreased, and this being so it is the more remarkable to find such a great increase in per cent. of the G. P.s. in whom a condition of dementia was the prevailing form of mental disorder.

While the per cent. of the demented type is thus seen to have increased, and the per cent. of the maniacs to have decreased, it is interesting to find that there has been no change in the proportion of the melancholics, though they remain so few in number that it is doubtful whether the figures representing them have any significance.

The conclusions which one would draw from the foregoing therefore, are that the bulk of general paralytics, are characterised by a condition of mental exaltation, but that this type is becoming less frequent than formerly, the type which is character-

ised by dementia, replacing the maniacal form, and that it is this demented type which is evidently responsible for the increased frequency of the malady. Arnaud directed attention to the increasing frequency of the demented type in general paralysis (An. Med. Psych. July 1888, p.89), and though there is still in this asylum a majority of G. P.s. in whom mental exaltation is the prominent feature, the above figures would seem to show, that the classical type is slowly but surely giving way before a rapidly increasing, though not less interesting type which is characterised by a condition of dementia, occurring even at the beginning of the disease.

As to the cause of this increase in the demented type, it is difficult to form any opinion, but it does not seem improbable that the more common tendency nowadays, for persons at that critical time of life when general paralysis is most apt to appear, to indulge in excesses of various kinds, but chiefly of drink and tobacco, may be held responsible, in some degree at least for this, remarkable change.

Charpentier indeed in 1890 stated that

"early dementia is the rule in cases given to tobacco excess" and that "this occurs mostly in young subjects" (An. Med. Psych. Sept. Oct. 1890).

DURATION.

The duration of general paralysis, has been stated by stated by different authorities, to be a period varying from 13 months (Calmeil Paralysie général des aliénés), to 23 months (Parchappe Recherches sur l'encéphale 1836 p.155) in pauper patients, while in private patients the disease is siad to last considerably longer - Mickle stating five years as the average duration of the latter in his experience. It is only to pauper patients, however, that the following notes apply, there being practically no records of private cases in this asylum.

In a total of 434 completed male cases, I find the average duration to be 23.8 months, while in 101 females it is 24.4 months, or in both sexes in 535 cases 24.0 months. The male cases are therefore of shorter average duration than the female by

0.6 months, and though the shorter duration in the male corresponds with the results arrived at by other authorities, the disproportion between the average durations of the two sexes is not so great in this county as is stated to be the case in other asylums. For example the West Riding Asylum reports (Vol.V p.202) give 20.7 months as the male average duration, and 25.9 months as the female or 21.6 for both sexes, between which the difference is seen to be 5.2 months; on the other hand at the Devon Asylum (Vol.I p.138), the male average duration was found to be as low as 15 months, while in females 27 months was given, the difference between the two being no less than 12 months.

An estimation of the average durations during each of the three decades gives the following results.-

Showing the average duration in each of the three decades.

	Male	Female
1867-76.	25.3	22.2
1877-86.	23.4	30.2
1887-96.	22.7	23.0

From this it is seen, that the average duration of the disease in males has become shorter during the last thirty years by about 2½ months, while in females it has had an opposite tendency, becoming very much larger during the second decade, while the third decade also shows an increase over the first, while over the whole period females are seen to be somewhat longer lived than males, the tendency for the average duration in males to become shorter than formerly - as stated above - would also seem to receive confirmation from the fact, shown by the following table - that there has been an increased per cent. of the male cases dying under three years duration when they are compared during the three periods while there has been a corresponding decrease in the per cent. of those over three years duration.

Showing p.c. of those dying in each period.

Duration	1st.Period	2nd.Period	3rd.Period
Under 1 year	11.2%	16.9%	18.13%
" 2 "	32.4%	34.3%	42.30%
" 3 "	19.8%	22.01%	25.27%
" 4 "	12.9%	9.5%	8.7%
" 5 "	6.03%	6.6%	2.19%
Over 5 "	7.75%	4.4%	3.29%

From this table it is seen that the per cents. of those dying under three years duration, have increased to a remarkable extent, whilst those dying after four years duration have undergone a marked decrease.

PROLONGED DURATION.

Of all the female cases the longest durations noted are those in three patients in whom the disease is said to have lasted over five years, that is about 4.8% of the total completed female cases.

Of the 434 males who have died, the same per cent. (4.8%) have lasted over five years, and it is interesting to note the similarity between the p.c. of the two sexes.

With regard to the above there does not appear to be any reason for doubting the identity of these cases with general paralysis, and one is surprised to find that there is no mention, in these records, of cases of much longer duration, for other writers mention instances in which the disease was prolonged for a much longer period and notably one by

Lunier (An. Med. Psych. 1877 p.426), which was said to have been of more than twenty years duration.

RAPID CASES.

There are noted, three rapid or "galloping" cases, two of which lasted three and the third four months, the two first both dying as the direct result of convulsive seizures, while the cause of death of the latter is not mentioned, although congestive attacks are noted as having occurred on one occasion during its progress. It is indeed idle to deny that general paralysis often runs a rapid course similar to the above cases, and that such occur more frequently than is usually supposed, but at the same time it must be admitted that the explanation of this rapid course is usually to be found in the sudden onset of severe congestive seizures, which quickly hurry the case to the inevitable termination.

HEREDITY AND DURATION.

Of the various circumstances which have been supposed to exercise an influence on the duration of general paralysis, heredity is one which has received at different times a large amount of attention, and I have thought it important enough - despite the admitted difficulty in obtaining reliable statistics concerning the point - to merit some investigation in the above connection, and though the results which I have obtained only bear out what has been before stated, "that hereditary cases, with their greater tendency to long remissions, are often of prolonged duration" (Mickle Op. Cit. 213), yet so far as they confirm this assertion, must serve some useful purpose in extending our knowledge of the different conditions, which it is necessary to take into consideration in trying to get at the truth respecting this fatal disease.

In those in whom a hereditary predisposition to insanity was said to have existed, I find the average duration to have been 24.6 months for males, and 25.5 months for females, or 25.0 months for both

sexes, whilst in those who had no hereditary taint, the average duration in males was 23.2 months, in females 24.1 months and in both sexes 24.0 months.

Dr. Lionet (Nouv. Dict. de Méd. et de Chir. Prat. 1878 p.123) held similar views to those of Mickle (quoted above) and though his statement was denied by Mirandon de Montyel (An. Med. Psych. Nov. 1878 p.333), yet there seems to be no doubt that the average duration of general paralysis, in cases where there was a clear history of heredity, is longer, though only slightly, than that of cases in which no such predisposition could be discovered, and this belief is supported by the above figures.

CONDITION AS TO MARRIAGE IN RELATION TO DURATION.

Table showing the average duration in males and females according to the condition as to marriage.

	Male	Female
M.	24.5 months	26.6 months
S.	22.6 "	24.7 "
W.	18.7 "	22.1 "

According to Mickle (Op. Cit. p.212) the female general paralytics on the average run a more prolonged course than do the males and this is confirmed by the figures given before as well as by those in the table above and this is seen to be the case whatever the condition as to marriage may be. The shortest average duration of all is seen to be among the widowed males, whilst the longest is among married females, and it is longest in the married of both sexes and shortest in the widowed.

INFLUENCE OF CONGESTIVE SIEZURES ON THE DURATION.

Under the name of congestive seizures, I have included the various forms of convulsive attacks, whether they were stated to be epileptiform, apoplectiform, or otherwise and this for two reasons. In the first place because it is difficult to come to a conclusion as to the real nature of the attack in many instances, for the description given in the older case books, especially when the information as to the occurrence of "fits" before admission, was evidently obtained from the friends of the patient, and in the

second, because my object here is merely to ascertain whether congestive seizures as a class, really shorten the duration of general paralysis, as is generally believed.

I find that in a total of 319 general paralytics who are stated to have had convulsions, either before or after admission, the average duration was 24.4 months, while in all those admitted during the same period who had no seizures of any kind, the average duration was 23.4 months, so that contrary to the common belief that G. P.s. in whom congestive seizures occur, are shorter lived than those who never have convulsions, it is seen that the very opposite is actually the case. This statement is confirmed by the conclusions arrived at by Dr. C. F. Newcombe (West Riding Asylum Reports, Vol.V. p.198), who found that "the average total stated duration of the disease and the average asylum residence until death, were longest in those with Apoplectiform and Epileptiform seizures, and shortest in those who had no seizures of either kind".

The above cases of course include all those in whom convulsions appeared, whether as the beginn-

ing of the disease as a termination, or at some intermediate period, and this being so it is the more remarkable that the above should be the state of affairs, and the only inference one can draw from this, is, that the great majority of convulsive seizures are not dangerous to life. This indeed can be readily believed when one sees in asylums how time after time, general paralytics are struck down by these attacks, apparently for the last time, and yet, a week or two later they have recovered from the immediate effects of the attacks, whilst it is also interesting to note how few of them apparently have suffered any permanent cerebral injury.

RELATION OF THE TYPE OF G.P. TO THE DURATION.

In the insane generally, it is found that in cases in which dementia is the form of mental disorder, run a very prolonged and chronic course, as a rule, and it may be for this reason that it has been asserted, and generally believed, that the same thing occurs in general paralytics who belong to the demented type. As a consequence, therefore, it is usually stated that, in the demented type of G.P., the duration is very much longer than is the case when mental exaltation is the prominent characteristic, but, according to the records of this asylum, it does not seem to be so certain as was formerly supposed, for the average duration of the disease in those of the demented type of both sexes, instead of being, as one is led to expect, much longer than that of the other forms, I find to be exactly the same as that of the exalted type, being in both 24.5 months, whilst in the melancholic type it is 24.6 for both sexes. The total number of cases under consideration here being over 500 it would seem evident, that, despite the

assertions of various writers to the contrary, the type of mental disorder has practically no relation to the shortening or lengthening of the duration, and that, even the melancholic type, which is supposed by many to run a comparatively short course, is of as long duration practically as the other and more common forms.

RELATION OF AGE AT ONSET TO DURATION.

The question as to whether the duration of G.P. is longer or shorter according to the age of the patient at onset has seemed to be worthy of investigation, for, it is natural to suppose, that in the young and healthy subject the disease is of longer duration than it is likely to be in persons who have passed their prime, and are therefore less able to resist the serious demands made on their bodily and mental functions.

So indeed is found to be the case, for I find, as will be seen from the table below, that the earlier the disease begins, the longer it lasts, and that as the age at onset increases, the duration is

correspondingly shortened, with the single exception of those admissions in which the age was stated to be over 60, and here, curiously enough, the average duration is longer. The question arises as to whether these cases are really G.P.s or not; but, as has already been stated, the figures quoted here only apply to general paralytics in whom there does not seem to be any doubt as to the diagnosis, though why there should be such a marked increase in the average duration at this particular age, it is rather difficult to see. The explanation probably is, that these are examples of the true chronic demented form in the aged, as distinguished from the demented form found in younger persons, and referred to before under the consideration of the types, the point of distinction being, that, whereas in the chronic demented form of old age all the internal organs of the body generally are in a state of senile decay, whilst in the demented form which occurs in people at the prime of life, the nervous system alone shows this senile change.

Table, showing the Average Duration at the Different Ages at Onset.

Age.	Average Duration.
Under 30.	26.1 months.
30-39.	23.1 "
40-49.	22.0 "
50-59.	18.0 "
60 & over.	20.6 "

INFLUENCE OF THE CAUSES ON THE DURATION

It is conceivable that the duration of G.P. may be determined, in some degree, by the particular agent which in the first case was supposed to have given rise to the disease, and the more so when such potent factors as drink and venereal disease have to be taken into consideration, though it must be admitted that the data available in this connection are somewhat uncertain quantities.

At the same time, it is just possible that an agent which acting on a brain rendered more than ordinarily liable to organic changes, by a long course of debauchery and venereal excesses, may exercise some influence on the time during which that brain

will carry on its functions, I have therefore attempted to arrive at some conclusions concerning this point, and the result is shown by the following figures.

By considering the duration of the cases due to the various causes under the usual subdivisions Moral and Physical, it is seen that taking each of the above divisions as a whole, those due to moral causes are of somewhat longer duration than those due to the physical, and on seeking an explanation as to why this should be so, we find that those to whom the great physical causes, drink and venereal disease, are assigned, show a remarkable difference in their respective durations, for while those cases which were said to have been caused by drink are found to have an average duration of 24.3 months, those in whom venereal disease was the assigned cause, have the much longer average duration of 30.5 months.

Assigned Causes.			Average Duration.
Physical	Drink	25.1	24.3
	Venereal		30.5
Moral.		26.0	

From this it seems clear, that these cases which were said to have been caused by drink, are responsible for the fact, that the average duration of those in whom collectively a physical cause was assigned, is shorter than the cases to which a moral cause was attributed, and it would therefore seem probable that drink is a more potent factor in the production of bodily and mental impairment, than is venereal disease, though this is denied by some Continental writers - notably by Houberg - but this point will be considered later under the head of Causation.

Whatever the truth of the matter, it is possible that drink - which before it would be credited as being the cause of a grave disease like general paralysis must evidently have been an influence at work for a considerable time prior to the onset of the malady - may cause more serious organic changes than venereal disease, which admittedly requires a much longer time to exert its impairing influence on the human body, or moral causes, such as shock, worry, etc., which, if they are really responsible

for the onset of G.P. must act in a fashion which at present is practically unknown.

RELATION OF A SPASTIC OR AN ATAXIC CONDITION TO DURATION.

The difficulty in estimating the above relation has been to classify the cases under two headings, but I have used for this purpose over 280 cases in which there was a more or less distinct and clear description of the gait, the condition of the knee jerk and the reflexes generally, if, indeed, it was not definitely stated in the notes, that the case was one with ataxic or spastic symptoms. It must also be noted that it is only within the last fifteen years, that the description of the above conditions has been general in this Asylum, and the following only applies to the cases which have occurred during that period.

In 241 cases in which a spastic condition was said to have been present, the average duration was 25.6 months, whilst in 44 cases ataxic symptoms were present, and their average duration was 24.1

months; that is to say that these spastic cases which, as will be seen later, are more liable to convulsions than the ataxic G.P.s., are of longer average duration than the latter, a point in support of the statement that General Paralytics with convulsions are longer lived on the average than those without.

Whether it is because the spastic cases are simply a sub-division of those coming under the head of the cases with convulsions and are therefore longer lived than the ataxic, which are less liable to them, or not, it is impossible to say, but the fact remains as before stated, that the former are longer lived than the latter.

CONGESTIVE SEIZURES.

Congestive seizures are nowadays divided into at least three varieties, viz., Epileptiform, Apoplectiform, and simple Paralytic; while Tetaniform and Hysteriform have also been described, but these must be of rare occurrence.

In the older days (which are partly covered

by this paper) judging by the records of this Asylum, observers were content to distinguish ~~them~~ between the first two only, and that not invariably, and it is for this reason that I have in the following notes omitted to mention the paralytic and other forms.

Showing p.c. of G.P.s. who had convulsions.

Male.	Female.
61.5%.	55.7%.

It is seen above that the per centage of males and females who had convulsions, at one time or another during the progress of the disease - no distinctions being made between the varieties and calculated on completed cases only - was 61% of the male G.P.s. and 55% of the females, and from this we gather that men are more liable to congestive attacks than women, by about 5%, when taken over the whole period. Thirty years ago the p.c. of females who had convulsions was greater than that of males, so that the latter were evidently less liable than now to their occurrence, while women were more so. (as seen from following table).

Showing P.c. of G.P.s. who had convulsions, during each of the three decades.

	Males.	Females.
1867-76.	46.7.	58.3
1877-86.	66.3	56.0
1887-96.	67.4	54.3

But this only holds good for the ten years 1867-76, since from the above table it is seen that for the last twenty years, convulsions have been far more frequent in men than in women, and moreover, they appear to be becoming more frequent still in men than formerly, whilst the opposite seems to be the case as regards women.

With regard to the statement of Esquirol ("Des Maladies Mentales" T.II., p.264) that G.P. had almost invariably convulsions setting in during the closing days, I find that 24% of the male cases recorded here, terminated in this way, that is, that convulsions appeared and were either directly or indirectly responsible for the fatal result, though in the majority of cases with congestive seizures, as has already been seen in noticing the duration, this is not so, for most seizures seem to be so slight

as to have no effect whatever in shortening the disease.

There seems to be an increasing proportion of men who die in consequence of the onset of convulsions, for there is an increased p.c. in the third decade over the first, of these terminating in this way, 12% being the proportion in the first period whilst it rises to 18% in the third.

The increase cannot be in relation with the mean age of males during the same period, for though there is also an increase in the mean age - thus rendering the cases less able to withstand the onset of convulsions - it is but slight, compared to the increase here noted.

Among women the p.c. of general paralytics terminating in this way, is 15% and it shows a slight decrease over the thirty years, the figures being respectively 18.5%-10.11%-17.5%, but this is so slight as to be of no importance, even taking into account the fact that in women there is a slight increase in the p.c. of those in whom a history of drink was given.

In order to elicit the facts with regard to the cases of general paralysis beginning with convul-

sions, I have examined all the cases said to have originated in this way, and omitting those in which the history of a "fit" as the beginning of the disease was not fairly clear, I find that there were 28% of the males who began in this way, whilst there were 31% of the women, and in both sexes there is a decreased p.c. in the third period compared with the first, so it would seem that women more frequently begin in this way than men, but a history of this prodromal symptom is not so frequent as it used to be, and that in both sexes.

VARIETIES OF CONGESTIVE SEIZURES & THEIR RELATIVE FREQUENCY.

I have endeavoured to investigate the relative frequency of the two chief forms of seizure i.e., Epileptiform and Apoplectiform, according as to whether they ushered in the disease, or marked its termination, and with the following result. In all cases where congestive seizures were said to have occurred the largest p.c. began with epileptiform

seizures, followed in order of frequency by, those Ending with Epileptiform seizures, those Beginning with Apoplectiform seizures, those Ending with Apoplectiform seizures, and this applies to both males and females.

With regard to those convulsions termed Apoplectiform, I have only included in the above those, the records of which, indicate that there was a certain degree of paresis on admission, thus supporting the probability of the genuineness of the apoplectic attack, while of course those in which apoplexy was noted as the termination can be accepted as genuine without question.

INFLUENCE OF AGE AT ONSET ON THE OCCURRENCE OF CONGESTIVE SEIZURES.

Showing the p.c. of those who had convulsions at the different age periods.

Age.	Per Cent.
Under 30.	65.3
30-39.	61.6
40-49.	61.0
50-59.	55.5

From the foregoing it would appear that the age of incidence of general paralysis has an influence - and that a marked one - on the occurrence of convulsions, and that they tend to become somewhat less frequent, the older the patient is at the onset of the disease. This agrees with the conclusions arrived at by Dr. Newcombe (West Riding Asylum Reports Vol.V., p.198) who found that in the West Riding of Yorkshire, the liability of general paralytics to Epileptiform seizures, did not increase in proportion with the patient's age when attacked, but had rather an opposite tendency.

INFLUENCE OF MENSTRUATION ON THE OCCURRENCE OF CONGESTIVE SEIZURES.

Daveau (Diss. sur la Paralysie Général observé à Charenton) observed that the menstrual discharge in women, by lessening congestion had an effect in diminishing the liability of women, before the age of the menopause, to the occurrence of congestive seizures. I find that a scrutiny (made for the purpose of elucidating this point) of all the

female G.P.s. during the last thirty years, gives the following result:-

Of Females under 45 years of age at death
77% had convulsions.

Of Females over 45 years of age at onset
57% had convulsions.

and it is therefore seen that 77% of those dying under 45, and in whom it is fair to infer that the menstrual function was still in an active state, are said to have had congestive seizures, but that only 57% of those in whom the disease began after menstruation had presumably ceased, have any record of the occurrence of congestive attacks.

The difference between the two is greater than can be explained by the ages of the patients, and it is therefore evident that the menstrual function does not have an influence on the cerebral congestion, if, indeed, it is granted that congestive attacks are due to this congestion. In the absence of any more reliable records of the state of menstrual function in relation to the occurrence or absence of congestive attacks, the above may surely give some indication, however slight, of the connection of any

between the two, and on the whole it seems certain that another theory than that advanced by Daveau must be looked for to explain the occurrence of convulsions, and it is the general opinion at the present time that it is rather to the localised cortical lesions as indicated by the cerebro-meningeal adhesions found post mortem, that we must turn for this explanation.

INFLUENCE OF DRINK ON THE OCCURRENCE OF CONGESTIVE SEIZURES.

While it is possible to imagine that a long history of drink may have some deleterious effect on such a delicate structure as the nervous system, by increasing its liability to premature decay, yet it is difficult to see with our present ignorance of the changes which occur in a brain under the influence of a congestive seizure, how the same agent can have a similar tendency in predisposing to such an attack. But it is only by following up what at first sight seem minor points, like the above, that there is any hope of extending our knowledge with

regard to the facts which underlie the aetiology of this disease, and I have, with this object in view, examined all the cases of G.P. in which convulsions occurred, noting at the same time whether a history of drink, as a cuase of the disease, was present or not.

Of the total number of cases which were complicated by convulsions, drink was said to have been the cause of the disease in 34.1%; but of those who had no convulsions a much larger number, or 38.5%, were said to have been caused by drink, and from this it appears that drink has no predisposing influence in determining the occurrence of congestive seizures whatever effect it may have in causing general paralysis itself .

RELATION OF ATAXIA & SPASTICITY TO THE OCCURRENCE OF CONGESTIVE ATTACKS.

As is generally believed and, as has been stated before, spastic causes seem to be more liable to congestive seizures than those of tabetic nature, for I find that in 241 cases, which were stated to be

of a spastic nature, in 171 congestive attacks occurred, or 71%, whilst in 44 of an ataxiform nature, 21 had convulsions or 47.7% and though the number of the latter is so small the above must surely indicate that there are grounds for the belief that spastic cases are more liable to convulsions than the tabetic, for in no other way does it seem possible to account for the great difference between the respective per cents., and it is not difficult to imagine why this should be so, for the spastic cases with their nerve centres in a highly sensitive state, as is indicated by the exaggeration of the reflexes etc., may on this account be more liable to have their equilibrium upset by some slight extraneous irritant, having its origin, perhaps, in the intestinal canal, as is often seen to be the case in infantile convulsions, and there is not, as far as I am aware, any more scientific explanation of their occurrence.

THE RELATION OF CONGESTIVE SEIZURES TO A STATE OF DEMENTIA.

The question as to whether dementia -

whether occurring at the onset of the disease or as the usual condition in the third stage of general paralysis - is due to the onset of convulsions or not, would seem to require an affirmative answer, for I find that of the cases which were said to have begun with an epileptiform attack, 75% were included under the demented type, whilst only 65% of those classed under mania with exaltation, began in this way, whilst a constant experience among G.P.s. is, that there is a tendency for a state of dementia to become more pronounced amongst those in whom congestive attacks are common. The difference between the above per cents. is not in itself very great, but, when taken along with what must be the personal experience of most observers, as above, it is a much more probable explanation of the occurrence of the state of dementia, than the assertion made by some that it is due to atheroma of the cerebral arteries; my experience of the latter condition being, that, though there may be found post-mortem extensive atheroma of t the aorta and other large blood vessels, there is seldom a similar state of affairs to be found either

in the basal arteries or in the cerebral arteries generally, even in old people and apart from general paralytics.

CAUSATION.

Of all the causes given as being responsible for the occurrence of General Paralysis, the physical stand out as being by far the most productive of these in giving rise to the disease. Compared with the moral, the former are in proportion to the latter of over five to one (6% to 34%) while drink accounts for more than half the p.c. of the total physical causes.

Showing the G.P. p.c. of total admissions to whom the different causes were assigned (men) in the three periods.

	First.	Second.	Third.
Moral.	8%	10%	10%
Physical.	34%	28%	51%
Drink alone.	26%	16%	35%

If the above figures be compared over the three periods, the moral causes seem to have increased only slightly while the physical show a very greatly

increased p.c. - at least in the third period over the first and second - though the second is somewhat less than the first.

It is noteworthy that drink is accountable for the greater part of the physical causes in each of the periods, the p.c. amounting to over half the total of the physical causes. In the insane generally the proportion of physical to moral causes during the same periods has varied from five to one for the first period, to nearly six to one for the third, and they have therefore acted fairly equally in these, as also in general paralytics, while there has been no great variation in their influence during the full period.

Now drink as a cause of insanity generally has increased from 23.3% of all causes during the ten years 1867-76, to 35.4% of all causes during 1887-96, while drink as a cause of general paralysis during the same period shows the following figures:-

During 1867-76 of the 157 insane persons admitted, in whom drink was said to have been the cause, 31 were general paralytics, or 19.7%.

During 1877-86 of the 187 admitted, 37 were G.P.s. or 19.6.

During 1887-96 of the 571 admitted 119 were G.P.s. or 20.8%.

From this it is seen that while drink as a cause, both of insanity generally and of general paralysis, is more frequent than it used to be, the increase is more marked in the insane generally than in G.P.s alone.

Injury as a cause of G.P. has been mentioned by several writers, Ball, for example, quoting three cases in which symptoms suggestive of general paralysis followed damage to the nervous system (Paralysie Général d'origine Traumatique". An.Med.Psych.,Sept 1888, p. 257). they being briefly as follows:-

(1). A postman in a collision had a cut on his head with possible fracture, he lost consciousness for ten minutes and afterwards developed G.P.

(2). A mechanic had premonitory symptoms for a year after sustaining an injury from lightning stroke followed by loss of consciousness, and then violent maniacal G.P.

(3). A man in good health cut his left cubital nerve and psychical trouble soon followed with symptoms of G.P.

Several cases in this country have been noted as having occurred as a result of injury; but beyond the bald statement, no particulars of any importance are given and this, in addition to the small number of the cases, makes it impossible to formulate any theory regarding them.

HEREDITARY PREDISPOSITION.

With regard to this question the following table shows the state of affairs.

Table, showing the G.P. p.c. of total admissions with a history of H.P.

-Years.	P.C.
1867-76.	20.3%
1877-86.	10.1%
1887-96.	7.5%

The conclusions to be drawn from the above may be several. The p.c. shown may, in the first, merely indicate more careful discrimination of cases in which hereditary predisposition was alleged; but, even if this is so, they may also show, to some extent, that causes other than inherited tendencies are now at work in the production of the disease, and

this last supposition would seem to receive confirmation from the fact that Hereditary Predisposition has become more common as a cause of insanity generally than it used to be, as is seen from the following table in which are shown the p.c. of all persons admitted who had a history of H.P.

Years.	P.C.
1867-76.	8.2%.
1877-86.	15.5%.
1887-98.	30.8%.

It cannot therefore be assumed that more care is now exercised so as to exclude cases in which there is a doubt as to the real existence of a history of H.P. in general paralytics, than is the case in other forms of insanity; but it must rather be admitted that an alteration has taken place in the conditions which govern the influence of heredity in giving rise to general paralysis.

Continental physicians, in dealing with this question, as well as with others before mentioned, seem to be able to trace the existence of heredity in a larger per cent. of the insane than is the case in

this country, Barthomeuf, for example, finding a history of hereditary predisposition in about 15% of general paralytics of both sexes.

OCCUPATION

There is nothing more uncertain in the whole question of aetiology than the part which occupation and social position play in the causation of general paralysis, and in any attempt to estimate the influence exerted by each, from such imperfect data as are available, this must be borne in mind.

The fact that private patients are not included in this paper eliminates the factor of social position, while the only occupations which seem to one to merit any notice in this connection, are those of soldiers and seafaring men in particular, while the only other point of interest is the relative proportions of the two broad divisions; those of laborius occupations and those of the better educated class, the latter comprising that class in which the brain is used more than the hands.

Comparing the numbers of the above, given

as having occurred during the three decades, I find that soldiers and seafaring men occupy the following positions:-

G.P. per cent. of soldiers & seafaring men.		G.P. per cent of all occupations.	
Years.	P.C.	Years.	P.C.
1867-76.	19.1%.	1867-76	17.2%
1877-86.	17.5%.	1877-86.	15.0%
1887-96.	33.0%	1887-96.	20.0%

There is therefore a greatly increased p.c. of G.P.s. belonging to the military and seafaring class, which is out of all proportion to the increase in the p.c. of G.P.s. of all occupations, and from this it would appear that military and seafaring men are more liable to general paralysis than any other class, and, in addition, they are more liable now than formerly.

It cannot be said that this is due, as has been asserted, to this class being more addicted to excess in drink than others, for, as is seen below, drink is not stated to have been the cause of the disease in so large a p.c. of G.P. sailors as in all

general paralytics - at least in this country - the proportion being 16% of soldiers and sailors, and 23% of other classes.

Miekle (Op.Cit. p.255) found 18% of all soldiers admitted to be G.P.s. and attributed the large p.c. to the comparative youth of our soldiery.

The statistics in this, as in other Asylums, bearing on the influence of venereal disease as a cause, are so meagre as to be of no practical value here, and this is to be regretted, since some Continental physicians are of opinion that venereal disease plays a much more important part in causing general paralysis than drink does - complaining at the same time that sufficient pains are not taken to make sure whether patients have been under its influence or not, and Houberg ("Allgemeine Zeit. für Psychiatrie". L. Band 3 & 4) found in 107 patients, a history of syphilis in 81%, certainly, and probably so in 11.2% more. It is therefore impossible to say from the statistics at command, the exact position occupied by venereal disease, and the same applies to the question of sexual excess.

The method of dividing the total number of G.P.s. into the two classes "Private & Pauper" not being possible here, I have adopted a somewhat similar plan and have separated the cases into:-

(1). Those who follow a more or less laborious calling, such as labourers, colliers, and tradesmen generally.

(2). Those who use the brain more than the hands, such as, accountants, musicians, chemists, clergymen, etc.

The result of this distinction is that comparing the numbers in the three decades there is seen to be a marked diminution in the p.c. of the first class, while there is an increase in those of the second, as below:-

Showing G.P. per cent. of total admissions in each class.

Year.	1st. Class.	2nd Class.
1867-76.	17.4%	7.5%
1877-86.	14.4%	15.6%
1888-96.	12.4%	37.5%

From the above it appears that formerly general paralysis was more common among the laborious

classes than nowadays, and that it is now among the better educated in the second class that the majority of its victims are found.

Of all G.P.s. in this county, the population of which is composed, for the most part, of the working classes, there was a proportion of over 40% drawn from this class, whilst business people came next with about 26%.

Arnaud (An. Med. Psych. July 1888, p.87) found similar results, the manual professions comprising 71%, while merchants and employés accounted for 20.7% .

TERMINATIONS.

A total of 28 men or 4.8%, are stated to have been relieved, and these are cases, the majority of which were re-admitted into this or some other Asylum at some later period, and subsequently died of general paralysis, whilst the number of those of which no afterhistory was known, is so small that they cannot be looked upon as cases either of temporary remission also, or cases in which the diagnosis was doubtful.

When the notes made of the above cases during residence, are examined, the impression that they were simply in a state of "remission" is confirmed, as may be gathered from the following case - typical of the others - extracted from the records:-

"W.J., 28, Farmer, M. admitted Feb.1873. Delusions of Wealth, visual hallucinations, sense of well-being, etc." but no report as to reflexes, speech, gait, muscular tremor, pupils, etc., while the note on discharge is as follows:- "Continues a quiet, good-natured and obliging man, with mind much weakened. Seems to be in a quiescent interval of G.P., but is so well that he is given a trial at home, and is discharged as relieved."

During the ten years 1867-76 one case - a male - is noted as having recovered and he was evidently in the early stage of G.P. the symptoms being noted as "suggestive of G.P." for the re-admission six months later and subsequent death after a series of congestive seizures followed in due course. Another "recovery" was evidently one of true G.P. of slow development, but was re-admitted.

The conclusions that one is bound to come to therefore are, that, in the first place, these cases which were said to have been "relieved" were either cases which, strictly speaking, could not be be considered G.P.s. of if the existence of G.P. be granted, they were simply cases in which remissions occurred, for the future history of all those obtainable, showed that without exception they were all readmitted, and died sooner or later of typical G.P. and it is not too much to say that the small number of which no after history was known probably drifted the same way. In the second place, of those said to have"recovered", not a single one will bear investigation, and we must conclude that they were either not cases of G.P. at all, or, if they were, they must have been examples of those described by Mickle (Op.Cit. p.213) as ending in "chronic mental disease" which, though apparently few in number, yet must be mentioned as recognised types. Strictly speaking they cannot be said to be recoveries from G.P., and perhaps it would be more satisfactory if they were regarded as being"relieved". That, at least, strikes

one as being the most satisfactory interpretation to put upon them.

The more we see of the disease, the more are we impressed by the feeling, that recovery is a word that can only rarely, if ever, be used in speaking of general paralysis, and that with the present means of treatment at our disposal the prognosis can never be any other than the inevitable one of "hopeless".

COMPLICATIONS.

It is interesting to note how few of the G.P.s. have died of intercurrent disease - apart from convulsions and pneumonia - 10.5% only of those without convulsions dying of other complaints, under the average age of two years, while the great diminution in the number of cases in which bedsores occur, is a satisfactory state of affairs from a nursing point of view, as is also the now less frequent appearance of haematomata.

In closing, I would simply point out that the conclusions - tabulated at the end of this paper - which I have felt justified in coming to as a result of my analysis of the foregoing cases, though they may not indicate absolutely the course which General Paralysis nowadays seems to be following, yet afford some grounds for the belief that there is a tendency for the type of the disease to undergo a change and I have tried to point out, under each head, in what direction this alteration is to be looked for.

As will have been noticed, nothing has been said with regard to Pathology and Treatment, and the only observation I would offer under this head is, that, with regard to the first, the lapse of time since it has become the custom, where possible, to verify the diagnosis by post mortem examination, has been so short - in this asylum only extending over a period of about ten years - that the materials at my disposal for this purpose are in consequence very limited, while, as regards treatment, it is with regret that I have to record that there has been practically no advance towards a means of alleviation

even of the symptoms of this intractable disease, far less an advance towards the cure.

One cannot help thinking that the only method by which an advance towards a means of cure can be attained, is that to be found in the further study of sero-therapeutics and it is a matter for congratulation, that by the establishment of an Institute of Preventive Medicine in London, we are now in a fair way to make progress in this direction, and by ensuring supplies of serum antitoxins, for the modern treatment of disease, to be independent of foreigners.

That so long a time should have elapsed, before this has been accomplished in this country, is nothing less than a disgrace to the nation, and it is due to obstacles placed in the way of scientific investigation by a sickly sentimentalism at home which cavils at the death of a few animals for the sake of science, while it looks on with approval and joins with pleasure in the slaughter of thousands for the sake of sport.

CONCLUSIONS.

(1). 12% of all admissions are G.P.s.

(2). The sex proportion is 4 males to 1 female.

(3). G.P. has become more common than formerly in both sexes.

(4). The sex proportion has undergone no material change.

(5). The disproportion between the sexes is less marked at the earlier and later ages (under 30 and over 50).

(6). Mean age of males on admission is greater than that of females.

(7). There has been no change in this state of affairs (6) for the last thirty years.

(8). The mean age of males is higher than formerly.

(9). The opposite is the case in females.

(10). The mean age of all G.P.s. (both sexes) is slightly higher than formerly.

(11). The difference between the mean ages of the two sexes is more pronounced than formerly.

(12). G.P. occurs most frequently between the ages of 30 & 55.

(13). Only one in every hundred G.P.s. is under 25 years of age.

(14). There is practically no change in the age at onset.

(15). The occurrence of G.P. in the order of frequency is, Married, Widowed & Single (both sexes).

(16). There has been no change in this order of late years.

(17). The Average duration in males is shorter than formerly.

(18). The average duration in females is slightly longer than formerly.

(19). The average duration is somewhat longer in females than in males.

(20). The average duration is shortest ~~in widowed~~ in widowed males, and longest in married females.

(21). The average duration is shorter in cases without H.P. than in those with.

(22). The average duration is shorter in those without than in those with convulsions.

(23). G.P. can be divided into three great types:- The Demented, The Exalted & the Melancholic.

(24) The exalted type is more common that the others.

(25). The exalted type is becoming less frequent.

(26). The demented type is becoming more frequent.

(27). The average duration is the same in all three types.

(28). G.P. due to physical causes are of shorter average duration than those due to moral causes.

(29). Drink is responsible for this shortening.

(30). Spastic cases are longer lived than ataxic.

(31). Males are more liable to convulsions than females.

(32). More men die as a result of convulsions than formerly.

(33). Epileptiform seizures appear most frequently at the beginning of the disease.

(34). The liability of seizures diminishes with the increase of age at onset.

(35). Menstruation has no influence on the occurrence of convulsions.

(36). Drink has no influence on the occurrence of convulsions.

(37). Tabetic cases are less liable to convulsions than spastic.

(38). Seafaring and military men are more liable to G.P. than other classes.

(39). Heredity plays a less important part than formerly.

(40). Physical causes are more active than moral causes.

(41). Drink is the most active physical cause.

(42). G.P. is more frequent among the educated classes than formerly.

---------ooOoo--------